

# DELTA - 4

LIGHTNING SURGE PROTECTED

4 POSITION RF COAX SWITCH

WITH FIELD-REPLACEABLE SURGE PROTECTOR PILL

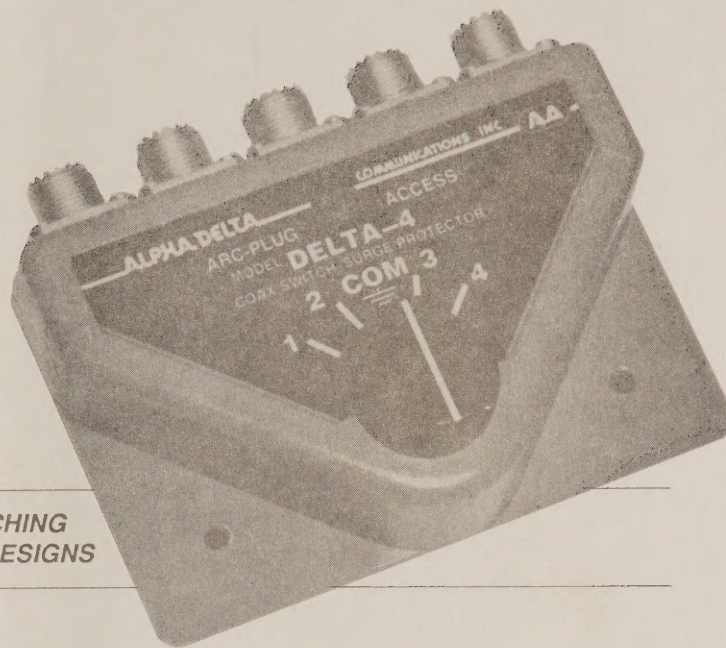
**ALPHA DELTA COMMUNICATIONS** INC.

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Centerville Ohio 45459

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*THE MODEL DELTA-4 SWITCH IS A PRECISION RF SWITCHING  
DEVICE EMPLOYING THE LATEST HIGH TECHNOLOGY DESIGNS*

## ---SPECIFICATIONS---

POWER RATING-1500 WATTS RF

IMPEDANCE-50 OHMS

CONNECTORS-TYPE S0-239: DELTA-4  
TYPE N: DELTA-4/N

SWITCH POSITIONS

Four, two either side of a "common" center connector.

LIGHTNING SURGE PROTECTION

Alpha Delta Model D-4 internally mounted, field-replaceable ceramic gas tube Arc-Plug® Cartridge Pill.

SPECIAL SWITCHING FUNCTIONS

When the knob points to the center (ground) switch position, all antenna circuits are internally disconnected and grounded. When the knob is in an active position, the unused antenna ports are grounded. The active position circuit is continuously protected by the Model D-4 Arc-Plug® Cartridge Pill.

GROUNDING REQUIREMENTS

A separate, external ground wire must be used from one set of user supplied mounting hardware (through either thru-hole on the base plate) to the station ground system. (not the equipment chassis.) The Arc-Plug® Cartridge Pill will not operate without a good ground. Note: Paint should be removed at point of ground hardware connection to base plate. It is also good practice to ground the coax shield at point of entry to the building.

ELECTRICAL SPECIFICATIONS

Nominal (S0-239 CONNECTORS)

	<u>VSWR</u>	<u>dB Loss</u>	<u>dB Isolation</u>
30 MHz	<1.1:1	.1dB	>60dB
150 MHz	<1.3:1	.15dB	>50dB
450 MHz	<1.4:1	.5dB	50dB

Model DELTA-4/N is rated through 1.3 GHz

PRICES AND SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

**ALPHA DELTA COMMUNICATIONS**

NOTE: WE HAVE MOVED  
ALPHA DELTA COMMUNICATIONS, INC.  
SUITE 210  
1232 EAST BROADWAY  
TEMPE, ARIZONA 85282  
(602) 966-2200



## ARC-PLUG® CARTRIDGE REPLACEMENT

Additional D-4 Arc-Plug® Cartridge Pills are available from Alpha Delta or your dealer at a nominal cost. Replacement in the field is quite easy, and the only tool required is the 7/32" hex wrench provided.

Should a severe lightning hit occur, the ceramic gas tube Arc-Plug® Cartridge Pill will short to ground protecting your equipment. The pill will remain shorted however (unlike its recovery to open circuit condition after a less severe hit or transient) and must be removed or replaced in order to continue operation. If a replacement pill is not immediately available you can continue operation (without lightning transient protection) by removing the shorted pill from the switch until you obtain its replacement.

To replace the pill, insert the hex wrench into the Arc-Plug® access hole on the front panel and remove the set screw by turning it counter-clockwise. Then, turn the switch upside down until the Arc-Plug® Cartridge Pill drops out of the access hole. Now, turn the switch right side up, drop the new Arc-Plug® Cartridge Pill into the access hole. (Make sure the Pill is lying flat with its metal surface up) then, insert the set screw and tighten it in a clockwise direction with the hex wrench until finger tight. (CAUTION-Over tightening of the set screw can damage the Arc-Plug® Pill.)

Note: The Alpha Delta Model D-4 Arc-Plug® Cartridge Pill is designed to reduce the hazards of lightning induced, or other high voltage induced surges. This device, however, will not prevent fire or damage caused by a direct lightning strike to an antenna, power lines or other structure.

Caution: Do Not change switch positions while RF is applied; or when the back cover is removed. This can cause damage to the switch contacts and such damage will not be covered by our warranty.

## APPLICATION INFORMATION

The model Delta-4 switch can be used in several different applications, depending upon the installation configuration.

- A. Multiple Antenna, Single RCVR/XCVR Application** - Connect the "jumper" coax from the RCVR/XCVR to the "common" connector on the switch. Connect antennas/dummy load to your choice of positions 1,2,3, or 4 on the switch.
- B. Multiple RCVR, Single Antenna Application**- Connect the single antenna coax to the "common" position on the switch. Connect RCVR "jumpers" to your choice of positions 1,2,3, or 4 on the switch.

Note: Switch specifications, including co-channel isolation in dB, are guaranteed only when using properly installed 50 ohm coaxial cable. Single wire "jumpers" or antenna feeds do not provide proper isolation or VSWR characteristics. For transmitting, any model must be placed at a point in the coax line where VSWR does not exceed 2:1 to prevent high RF voltages from triggering the Arc-Plug® Pill.

### Warranty

Seller warrants that each unit sold is manufactured in accordance with seller's specifications, drawings, samples or data in effect on the date of receipt of the order, as they apply to those parts called for on the order, and that each unit is free from defects in material and workmanship.

Sellers liability under this warranty is limited to the repair or replacement of any unit which proves to be defective in material or workmanship under normal use and service provided the unit is returned to the Alpha Delta shipping point (or authorized distributor if purchased through this source) within six months from date of shipment, and will in no case be responsible for special or consequential damages including but not by way of limitation, cost of removal of units from or reinstallation in equipment. This warranty is in lieu of all other warranties expressed or implied.